This document gives pertinent information concerning the reissuance of the Virginia Pollutant Discharge Elimination System (VPDES) Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.90 MGD wastewater treatment plant (WWTP). This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards (WQS) of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	Clevengers Village WWTP 118 West Davis Street, Suite 101 Culpeper, VA 22701	SIC Code :	4952 WWTP
	Facility Location:	19525 Clevengers Utility Road Jeffersonton, VA 22724	County:	Culpeper
	Facility Contact Name:	Paul Howard, Jr.	Telephone Number:	(540) 727-3409
	Facility E-mail Address:	phoward@culpepercounty.gov		
2.	Permit No.:	VA0080527	Expiration Date of previous permit:	May 20, 2013
	Other VPDES Permits associated with this facility:		VAN020027	
	Other Permits associated with this facility:		NA	
	E2/E3/E4 Status:	NA		
3.	Owner Name:	The County of Culpeper		
	Owner Contact/Title:	Paul Howard, Jr. / Director of Environmental Services	Telephone Number:	(540) 727-3409
	Owner E-mail Address:	phoward@culpepercounty.gov		
4.	Application Complete Date:	January 16, 2013		
	Permit Drafted By:	Susan Mackert	Date Drafted:	March 19, 2013
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	March 28, 2013
	WPM Review By:	Bryant Thomas	Date Reviewed:	April 8, 2013
	Public Comment Period :	Start Date: June 14, 2013	End Date:	July 15, 2013

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name :	Rappahannock River	Stream Code:	3-RPP
Drainage Area at Outfall:	204 square miles*	River Mile:	159.8
Stream Basin:	Rappahannock River	Subbasin:	None
Section:	3	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-E02R
7Q10 Low Flow:	1.2 MGD	7Q10 High Flow:	21 MGD
1Q10 Low Flow:	0.97 MGD	1Q10 High Flow:	17 MGD
30Q10 Low Flow:	3.7 MGD	30Q10 High Flow:	32 MGD
Harmonic Mean Flow:	25 MGD	30Q5 Flow:	6.1 MGD

*Using GIS, DEQ staff has determined the drainage area to be 205 square miles which is reflected within the planning statement (see Attachment 5). During the previous reissuance of the permit, a drainage area of 204 square miles was utilized. It is staff's best professional judgement that a drainage area of 204 square miles be used as it provides consistency with the previous permit.

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

✓	State Water Control Law		EPA Guidelines
✓	Clean Water Act	✓	Water Quality Standards
✓	VPDES Permit Regulation	✓	Other 9VAC25-820 (Nutrient General Permit)
✓	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class II

9. Permit Characterization:

✓	County	✓	Effluent Limited		Possible Interstate Effect
	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State		Whole Effluent Toxicity Program Required		Interim Limits in Permit
✓	POTW*		Pretreatment Program Required		Interim Limits in Other Document
✓	TMDL				

*POTW = Publicly Owned Treatment Works

10. Wastewater Sources and Treatment Description:

The Clevengers Village WWTP is a municipal wastewater treatment plant that treats domestic wastewater from Culpeper County's Clevengers Corner Service Area. The Water Quality Management Plan (9VAC25-720) established nutrient allocations for the facility based on a design flow of 0.90 MGD, rather than the facility's actual design flow on 0.86 MGD. It is staff's best professional judgement that the design flow be referenced as 0.90 MGD within this reissuance to be consistent with the Water Quality Management Plan. The facility currently operates at approximately 0.055 MGD. The previous permit included tiers for 0.30 MGD, 0.60 MGD, and 0.90 MGD. With this reissuance Culpeper County has requested removal of the 0.30 MGD and 0.60 MGD flow tiers.

The plant's treatment train is known as a 5-stage Bardenpho process. The facility is constructed in a modular layout consisting of three modules or treatment trains, each capable of treating 0.30 MGD. Influent flow enters the WWTP via the liquid process train. This train is composed of preliminary treatment (screening, grit removal and flow measurement), flow equalization, Biological Nutrient Removal (BNR), secondary clarification, UV disinfection, flow measurement and post aeration. Final discharge is to the Rappahannock River via Outfall 001.

A Certificate to Operate (CTO) was issued to the facility on August 26, 2010 (Attachment 2).

See Attachment 3 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall* Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.90 MGD	38° 39'43.7" N 77° 53'48.3" W

* The outfall latitude/longitude noted in Table 1 differs from that provided by Culpeper County within the application package. DEQ staff has determined the latitude/longitude above is more accurate and this is reflected within the planning statement (see Attachment 5). It is staff's best professional judgement that the above coordinates be used.

See Attachment 4 for (Jeffersonton, DEQ #196B) topographic map.

11. Sludge Treatment and Disposal Methods:

Waste activated sludge is processed along a separate treatment train referred to as the solids stream. This stream is comprised of aerobic digestion, solids conditioning, and dewatering. The waste activated sludge is pumped to one of three aerobic digesters where the contents are aerated with coarse bubble diffusers, stored and decanted prior to being pumped to a belt filter press for dewatering.

Dewatered sludge cake is conveyed to a covered roll off box and transported to Culpeper County's Laurel Valley Solid Waste Transfer Station. Republic Waste transports the sludge from the solid waste transfer station to the Old Dominion Sanitary Landfill in Richmond, Virginia. The application indicates that approximately 92 dry metric tons of solids are generated each year.

12. Discharges and Monitoring Stations in Vicinity of Discharge in Waterbody VAN-E02R:

TABLE 2	
3-RPP150.20	DEQ freshwater probabilistic monitoring station downstream from Route 621.
3-RPP150.32	DEQ ambient monitoring station located at the Route 621 bridge crossing approximately 9.4 miles downstream of Outfall 001
VA0021172	Warrenton Town Sewage Treatment Plant (UT* to Great Run)
*UT = Unnamed Tributary	
VA0031763	Marshall Wastewater Treatment Plant (UT to Carter Run)
VA0076805	Remington Wastewater Treatment Plant (Rappahannock River)
VA0077411	Fauquier Springs Country Club Sewage Treatment Plant (Rappahannock River)
VAG406058	Roger D. Hawkins Residence (UT to Carter Run)
VAG406066	Lawrence Kipps Rental Residence (Marsh Run)
VAG406334	Fauquier Habitat for Humanity – Yates Residence (UT to Borrows Run)
VAG406490	Petronzio Ellsworth Residence (UT to Rappahannock River)
VAR051721	Augusta Lumber, LLC (UT to Rappahannock River)

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Micro2000	750 Gallons	Chemical Feed Room
Caustic Soda (25%)	750 Gallons	Chemical Feed Room
Alum	2500 Gallons	Alum Room
Polymer	250 Gallons	Belt Press Room
Soda Ash	1 Pallet (2650 Pounds)	Alum Room
Degreaser	55 Gallons	Belt Press Room

14. Site Inspection:

A site visit was performed by the facility's water compliance inspector, April Young, on October 21, 2011.

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

This facility discharges into the Rappahannock River. However, the receiving segment of the Rappahannock River has not been monitored or assessed by DEQ. The nearest downstream DEQ monitoring station is 3-RPP150.32, located at the Route 621 bridge crossing, approximately 9.4 miles downstream of Outfall 001. The following is the water quality summary for this portion of the Rappahannock River, as taken from the Draft 2012 Integrated Assessment*:

Class III, Section 3.

DEQ freshwater probabilistic monitoring station 3-RPP150.20, downstream from Route 621, and ambient water quality monitoring station 3-RPP150.32, at Route 621.

DEQ benthic macroinvertebrate biological monitoring and associated chemical data finds this segment to be fully supporting the aquatic life and wildlife uses.

E. coli monitoring find a bacterial impairment, resulting in an impaired classification for the recreation use. This assessment is carried forward from the 2010 assessment, as no new *E. coli* bacteria has been collected. This impairment is nested within the downstream completed bacteria TMDL for the Rappahannock River.

The fish consumption use is fully supporting based on water column metals data.

* Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 4 – 303(d) Impairment and TMDL Information

*Impairment Information in the Draft 2012 Integrated Report**

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA**	Basis for WLA	TMDL Schedule
Rappahannock River	Recreation	*E. coli*	5.5 miles	Rappahannock River Basin Bacteria 01/23/2008	1.57+12 cfu/year *E. coli*	126 cfu/100ml --- 0.9 MGD	---

*Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.

**WLA = Wasteload Allocation

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

The full planning statement is found in Attachment 5.

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, the Rappahannock River, is located within Section 3 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 6 details other water quality criteria applicable to the receiving stream.

Ammonia as N:

The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream and/or effluent temperature and pH. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream.

During the previous reissuance of this permit, receiving stream monitoring data for pH and temperature from ambient monitoring station 3-RPP175.51 (1987 – 2002) was re-evaluated against receiving stream monitoring data for pH and temperature from 2003 – 2007. Staff found no significant differences in the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. Therefore, the previously established pH and temperature values were used to calculate ammonia criteria.

Because the facility has become operational since the previous reissuance, staff has re-evaluated pH and temperature data from 2008 – 2013 from ambient monitoring station 3-RPP175.51 (Attachment 6). It is staff's best professional judgement that the new data be used to determine new ammonia water quality criteria and new wasteload allocations (WLAs). Table 5 and Table 6 below show the 90th percentile ambient data comparisons.

Table 5 – 90th Percentile pH Comparison (Ambient Data)	
2007	2013
7.7 S.U.	7.5 S.U.

Table 6 – 90th Percentile Temperature Comparison (Ambient Data)		
Season	2007	2013
June - November	24.4 °C	26 °C
December - May	16.9 °C	15 °C

When instream temperature and pH data are utilized, staff must also use effluent pH and temperature data to establish the ammonia water quality standard to account for mixing in receiving waters. The 90th percentile pH and temperature was derived from Outfall 001 DMR submissions dated December 2010 to December 2012 (Attachment 6). Table 7 and Table 8 below show the 90th percentile derivations. The ammonia water quality standards calculations are shown in Attachment 6.

Table 7 – 90th Percentile pH Derivation (Effluent Data)
2013
8.0 S.U.

Table 8 – 90th Percentile Temperature Derivation (Effluent Data)	
Season	2013
June - November	25 °C
December - May	19 °C

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream and/or effluent hardness (expressed as mg/L calcium carbonate). Hardness data has not been collected from ambient monitoring station 3-RPP175.51 since June 2003. As such, the average receiving stream hardness of 26 mg/L utilized in the previous reissuance shall be carried forward.

When instream hardness data is available for use, staff must also use effluent hardness data to establish the hardness-dependent metals criteria. Because there is no Total Hardness effluent data for Outfall 001, staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge.

The hardness-dependent metals criteria shown in Attachment 6 are based on the two values above.

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

1) *E. coli* per 100 mL of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 ml)	126

[1]For a minimum of four weekly samples [taken during any calendar month].

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, the Rappahannock River, is located within Section 3 of the Rappahannock River Basin. This section has not been designated with any special standards.

e) Threatened or Endangered Species

The Virginia Department of Game and Inland Fisheries (DGIF) Fish and Wildlife Information System Database was searched on January 16, 2013, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Shenandoah Salamander, Dwarf Wedgemussel, Peregrine Falcon, Upland Sandpiper, Loggerhead Shrike, Henslow's Sparrow, Appalachian Grizzled Skipper, Green Floater, and Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge.

The stream that the facility discharges to is within a reach identified as having an Anadromous Fish Use. It is staff's best professional judgment that the proposed limits are protective of this use.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 2 based on an evaluation of the current 305(b)/303(d) Integrated Report (IR). No significant degradation to the existing water quality will be allowed. In accordance with current DEQ guidance, no significant lowering of water quality is to occur where permit limits are based on the following:

- The dissolved oxygen in the receiving stream is not lowered more than 0.2 mg/L from the existing levels;
- The pH of the receiving stream is maintained within the range 6.0-9.0 S.U.;
- There is compliance with all temperature criteria applicable to the receiving stream;
- No more than 25% of the unused assimilative capacity is allocated for toxic criteria established for the protection of aquatic life; and
- No more than 10% of the unused assimilative capacity is allocated for criteria for the protection of human health.

The antidegradation policy also prohibits the expansion of mixing zones to Tier 2 waters unless the requirements of 9VAC25-260-30.A.2 are met.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:
Effluent data obtained from the permit application and Discharge Monitoring Report (DMR) forms from December 2010 to December 2012 has been reviewed and determined to be suitable for evaluation. The following pollutants require a wasteload allocation analysis: Zinc, Chlorpyrifos (Dursban), Demeton, Guthion, Malathion, and Parathion.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o[Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- f = Decimal fraction of critical flow from mixing evaluation
- Q_s = Critical receiving stream flow
  (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- C_s = Mean background concentration of parameter in the receiving stream.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9VAC25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).

- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage, and Attachment A data indicate Zinc, Chlorpyrifos (Dursban), Demeton, Guthion, Malathion, and Parathion are present in the discharge. Attachment 6 details the mixing analysis and WLA derivations for these pollutants.

Antidegradation Wasteload Allocations (AWLAs).

Since the receiving stream has been determined to be a Tier II water, staff must also determine antidegradation wasteload allocations (AWLAs). The steady state complete mix equation is used substituting the antidegradation baseline (C_b) for the in-stream water quality criteria (C_o):

$$AWLA = \frac{C_b(Q_e + Q_s) - (C_s)(Q_s)}{Q_e}$$

Where:
- AWLA = Antidegradation-based wasteload allocation
- C_b = In-stream antidegradation baseline concentration
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- C_s = Mean background concentration of parameter in the receiving stream.

Calculated AWLAs for the pollutants noted in b. above are presented in Attachment 6.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with (A)WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N (December – May):
Staff reevaluated pH and temperature and has concluded it is different than what was used previously to derive ammonia criteria (Attachment 6). As result, staff used the new data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (Attachment 6). DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

Using the new data, no ammonia limitations are needed (Attachment 7). As such, ammonia requirements with this reissuance are less stringent than in the previous permit. However, a review of the previous limit derivation was found to be technically incorrect. During the previous reissuance water quality criteria were used for limit derivation rather than the most limiting allocations thereby incorrectly determining the need for an ammonia limitation.

Ammonia limitations for the months of December – May are not warranted for this discharge.

2) TKN (June – November):
TKN limitations are based on the stream modeling conducted in October 1991 (Attachment 8). A TKN limit of 3.0 mg/L assumes that ammonia is removed and that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized. The weekly average limit will be 4.5 mg/L based on a multiplier of 1.5 times the monthly average. These limitations are carried forward from the previous reissuance.

3) Metals:
An analysis of the data provided with this reissuance indicates the need for a monthly average and daily maximum zinc limitation of 27 µg/L (Attachment 9). The limit is derived based on one datum point of 42 µg/L. Because the limit is derived from one datum point, it is staff's best professional judgement that monitoring be implemented in lieu of a limitation. Monitoring will allow for additional data to be collected to assist in a later determination of whether a zinc limit is warranted. As such, dissolved zinc monitoring shall be implemented with this reissuance. A monitoring frequency of once every six months (1/6M) is proposed.

4) Total Hardness:
The Water Quality Criteria for some metals are dependent on the effluent hardness (expressed as mg/L calcium carbonate). Because staff has proposed monitoring for dissolved zinc, it is staff's best professional judgement that hardness monitoring also be implemented with this reissuance. A monitoring frequency of once every six months (1/6M) is proposed.

5) Pesticides (Chlorpyrifos, Demeton, Guthion, Malathion, Parathion):
An analysis of the data provided with this reissuance indicates no effluent limits are necessary (Attachment 10). While limits are not warranted with this reissuance, it is staff's best professional judgement that monitoring be implemented as the above pesticides are noted as being present in the discharge. A monitoring frequency of once every six months (1/6M) is proposed.

The permittee shall sample and submit results for Chlorpyrifos, Demeton, Guthion, Malathion, and Parathion at the frequency of once every six (6) months in accordance with the schedule below. If all reported results for Chlorpyrifos, Demeton, Guthion, Malathion, and Parathion do not exceed the laboratory established quantitation limit (QL) after the first two years of monitoring, the permittee may submit a written request to DEQ-NRO for a reduction in the sampling frequency to once every year. Should any of the yearly monitoring results for Chlorpyrifos, Demeton, Guthion, Malathion, and Parathion exceed the laboratory established QL, the monitoring frequency shall revert to once every six months for the remainder of the permit term.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), carbonaceous biochemical oxygen demand-5 day ($CBOD_5$), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed.

Dissolved Oxygen, $CBOD_5$, and TKN limitations are based on the stream modeling conducted in October 1991 (Attachment 8) and are set to meet the water quality criteria for D.O. in the receiving stream and are set to ensure that the receiving stream D.O. does not decrease more than 0.2 mg/L to meet the requirements of the antidegradation policy. The 7Q10 flow has changed since the original modeling was conducted, but the change is not significant enough to warrant new modeling.

It is staff's practice to equate the Total Suspended Solids limits with the BOD_5 limits. For the months of December through May, TSS limits are established to equal BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of $\geq$0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN020027. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of $\geq$0.5 MGD above the fall line and $\geq$0.1 MGD below the fall line.

Monitoring for Nitrates + Nitrites and Total Kjeldahl Nitrogen are included at this flow tier. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820.

Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this permit. The annual averages are based on 9VAC25-40 and GM07-2008.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, pH, BOD_5, $CBOD_5$, Total Suspended Solids, Total Kjeldahl Nitrogen, Dissolved Oxygen, *E. coli*, Total Nitrogen (calendar year), and Total Phosphorus (calendar year).

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for TKN monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 8.345.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L and 40 CFP 122.44. As stated earlier, VPDES permit regulations, 9VAC25-31-220.L.2.b(1) and (2), does allow for the relaxation of permit limitations during a permit reissuance if new information becomes available and technical mistakes were made during the previous issuance, respectively. Technical mistakes were discovered upon review of the previous reissuance file (see Section 17.c.1 of the Fact Sheet).

19. Effluent Limitations/Monitoring Requirements: Outfall 001

Design flow is 0.90 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	Continuous	TIRE
pH	2	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5 (December – May)	2,4	25 mg/L	85 kg/day	38 mg/L	130 kg/day	NA	NA	3D/W	8H-C
$CBOD_5$ (June – November)	2,4	3.0 mg/L	10 kg/day	4.5 mg/L	15 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS) (December – May)	1	25 mg/L	85 kg/day	38 mg/L	130 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS) (June – November)	1	5.0 mg/L	17 kg/day	7.5 mg/L	26 kg/day	NA	NA	3D/W	8H-C
Total Kjeldahl Nitrogen (TKN) (June – November)	2,4	3.0 mg/L	23 lb/day	4.5 mg/L	34 lb/day	NA	NA	3D/W	8H-C
Dissolved Oxygen (DO)	2	NA		NA		7.6 mg/L	NA	1/D	Grab
E. coli (Geometric Mean)	2,3	126 n/100mls		NA		NA	NA	3D/W	Grab
Chlorpyrifos[a]	1,2	NL (µg/L)		NA		NA	NA	1/6M	Grab
Demeton[a]	1,2	NL (µg/L)		NA		NA	NA	1/6M	Grab
Guthion[a]	1,2	NL (µg/L)		NA		NA	NA	1/6M	Grab
Malathion[a]	1,2	NL (µg/L)		NA		NA	NA	1/6M	Grab
Parathion[a]	1,2	NL (µg/L)		NA		NA	NA	1/6M	Grab
Temperature	2	NL (°C)		NA		NA	NA	1/D	IS
Zinc, Dissolved[b]	1	NL (µg/L)		NA		NA	NA	1/6M	Grab
Hardness, Total (as $CaCO_3$) [b]	1	NL (mg/L)		NA		NA	NA	1/6M	Grab
Nitrate+Nitrite, as N	2,5	NL (mg/L)		NA		NA	NA	2/M	8H-C
Total Nitrogen[c]	2,5	NL (mg/L)		NA		NA	NA	2/M	Calculated
Total Nitrogen – Year to Date[d]	2,5	NL (mg/L)		NA		NA	NA	1/M	Calculated
Total Nitrogen – Calendar Year[d]	2,5	4.0 mg/L		NA		NA	NA	1/YR	Calculated
Total Phosphorus	2	NL (mg/L)		NA		NA	NA	2/M	8H-C
Total Phosphorus – Year to Date[d]	2,5	NL (mg/L)		NA		NA	NA	1/M	Calculated
Total Phosphorus – Calendar Year[d]	2,5	0.3 mg/L		NA		NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Best Professional Judgement
2. Water Quality Standards
3. DEQ Disinfection Guidance
4. Stream Model - Attachment 8
5. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.
IS = Immersion stabilization.

1/D = Once every day.
3D/W = Three days every week.
1/M = Once every month.
2/M = Twice every month, greater than seven days apart.
1/6M = Once every six months.
1/YR = Once every twelve months.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored eight-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

1/6M = The semi-annual monitoring period shall be January 1 – June 30 and July 1 - December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (July 10 and January 10, respectively).

1/YR = The annual monitoring period shall be January 1 through December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

a. See Section 17.c.4 for more information on reporting of pesticides.
b. Dissolved zinc and hardness shall be collected concurrently.
c. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite
d. See Section 20.a. for more information on the nutrient calculations.

20. Other Permit Requirements:

a) Part I.B. of the permit contains additional quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

21. Other Special Conditions:

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the teatment works.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.

f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.

g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.

h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

i) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

j) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

k) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

l) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

m) TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
1. The O&M special condition has been revised to be consistent with current agency practice.
2. The Sludge Reopener special condition has been added as Sewage Sludge Management Plan, Sludge Monitoring and Additional Reporting Requirements have been removed from the permit due to the factthe facility does not land applyits sludge.
3. The Sludge Use and Disposal special condition has been added as Sewage Sludge Management Plan, Sludge Monitoring and Additional Reporting Requirements have been removed from the permit due to the factthe facility does not land applyits sludge.
4. The In-stream Monitoring special condition has been removed with this reissuance as sufficient data has been collected.

b) Monitoring and Effluent Limitations:
1. At the request of the facility, monitoring and effluent limitations for the 0.30 MGD and 0.60 MGD flow tiers were removed.
2. The ammonia limitations for the time period of December – May were removed with this reissuance based on new effluent data and discovered technical errors in the previous permit.
3. Monitoring for Chlorpyrifos, Demeton, Guthion, Malathion and Parathion, without effluent limitation, has been added with this reissuance based on data submitted with the reapplication package.

4. Monitoring for Dissolved Zinc, without effluent limitation, has been added based on data submitted with the reapplication package.
5. Monitoring for Total Hardness has been added to the permit.

c) Other:
1. Sludge language has been removed from the permit as the facility does not land apply its sludge.
2. Part II.A (Monitoring) of the permit has been updated to incorporate the Virginia Environmental Laboratory Accreditation Program (VELAP) requirements for laboratory analysis.

23. Variances/Alternate Limits or Conditions: None

24. Public Notice Information:

First Public Notice Date: June 13, 2013 Second Public Notice Date: June 20, 2013

Public Notice Information is required by9VAC25-31-280 B. All pertinentinformation is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, susan.mackert@deq.virginia.gov. See Attachment 11 for a copy of the public notice document.

Persons may comment in writingor by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible,to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing Due notice of anypublic hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. Additional Comments:

Previous Board Action(s): None

Staff Comments: None

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 12.

Fact Sheet Attachments – Table of Contents

Clevengers Village WWTP
VA0080527

2013 Reissuance

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN VIRGINIA REGIONAL OFFICE

13901 Crown Court Woodbridge, VA 22193

SUBJECT: Flow Frequency Determination
Clevengers Village WWTP (VA0080527)

TO: Permit Re-issuance File

FROM: Susan Mackert

DATE: April 2, 2013

This memo supersedes the January 31, 2008 flow frequency memo concerning the subject VPDES permit. This is due to the facility becoming operational since the previous reissuance and to address a name change of the facility.

The Clevengers Village WWTP discharges to the Rappahannock River near Warrenton, Virginia. Stream flow frequencies are required at this site for use in developing effluent limitations for the VPDES permit.

The USGS has operated a continuous record gage on the Rappahannock River near Warrenton, Virginia (#01662000) from 1944 - 1986. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges or springs lying between the gage and the outfall.

Rappahannock River at Warrenton, VA (#01662000):

Drainage Area = 195 mi^2

1Q10 = 1.4 cfs	High Flow 1Q10 = 25 cfs
7Q10 = 1.8 cfs	High Flow 7Q10 = 31 cfs
30Q10 = 5.5 cfs	High Flow 30Q10 = 47 cfs
30Q5 = 9.1 cfs	Harmonic Mean = 37 cfs

Rappahannock River at discharge point:

Drainage Area = 204 mi^2

1Q10 = 1.5 cfs (0.97 mgd)	High Flow 1Q10 = 26 cfs (17 mgd)
7Q10 = 1.9 cfs (1.2 mgd)	High Flow 7Q10 = 32 cfs (21 mgd)
30Q10 = 5.8 cfs (3.7 mgd)	High Flow 30Q10 = 49 cfs (32 mgd)
30Q5 = 9.5 cfs (6.1 mgd)	Harmonic Mean = 39 cfs (25 mgd)

The high flow months are December through May.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

August 26, 2010

Culpeper County
Clevengers Village WWTP
PTL#24987, Permit VA0080527

Mr. Jim Hoy
Culpeper County
118 West Davis St, Suite 101
Culpeper, VA 22701

Dear Mr. Hoy:

In accordance with 9VAC25-790-190 of the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*, this letter transmits the Certificate to Operate (CTO) for Clevengers Village WWTP located in Culpeper County. The CTO is being issued based on the Application for Certificate to Operate dated August 10, 2010, and received by this office on August 13, 2010.

If you have any questions about this letter or the approval process, please contact me at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,

Alison Thompson
Water Permits Technical Reviewer

cc: VPDES Permit File VA0080527
VDH District Office, attn: Environmental Health Manager
Culpeper County Local Building Official
Maynard Jones, Jr, Wiley and Wilson, 127 Nationwide Dr, Lynchburg, VA 24502-4272

Attachment: CTO

Department of Environmental Quality
APPLICATION for CERTIFICATE TO OPERATE
Under the Sewage Collection and Treatment Regulations 9 VAC 25-790
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Clevengers Village Wastewater Treatment Plant P.E. Seal Date on Cover: February 17, 2006 Specifications Title and Date: Culpeper County Water and Sewer Authority, Clevengers Village Wastewater Treatment Plant, February 17, 2006	
Location of Project: Jeffersonton	County/City: County of Culpeper
Receiving Wastewater Collection System(s): Clevengers Village and South Wales	
Receiving Sewage Treatment Plant(s): Clevengers Village Wastewater Treatment Plant	
PROJECT OWNER: County of Culpeper	**RESPONSIBLE ENGINEER**
Owner Contact Name: Jim Hoy, P.E.	Name: Maynard K. Jones, Jr. P.E.
Title: County Engineer	Company Name: Wiley|Wilson
Address: Environmental Services 118 West Davis Street, Suite 101 Culpeper, VA 22701	Address: 127 Nationwide Drive Lynchburg, VA 24502-4272
Phone: (540) 727-3409	Phone: 434.947.1657
Email: jhoy@culpepercounty.gov	Email: mjones@wileywilson.com
Owner Signature and Date: 8/10/2010	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: 21542

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct. ***Please see attached July 20, 2006, construction approval letter from DEQ.***

Design Flow: (a) average daily flow (MGD): 0.9 (b) peak flow (MGD): 1.8

For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: VA0080527

Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes X No ☐

For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I X II ☐ III ☐ NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

X *The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."

COMMONWEALTH OF VIRGINIA
M.K. JONES, JR.
Lic. No. 5433
08/04/10
PROFESSIONAL ENGINEER

M.K. Jones Jr. 08/04/10

Licensed Engineer's Signature and original seal (signed and dated)

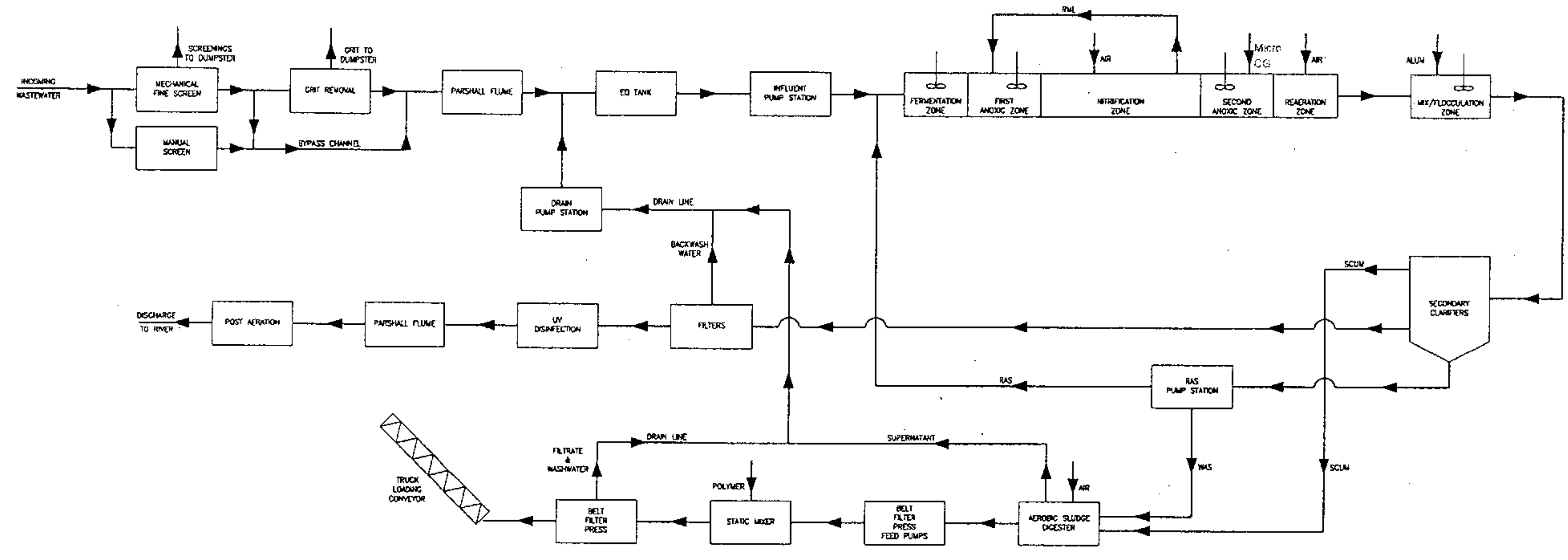
For DEQ use only:

In accordance with the *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, constitutes your Certificate to Construct. This Certificate is valid for a period of five years from the date of issuance. Other permits and authorizations may be necessary. Please contact your Regional DEQ Office if you have any questions.

Alison Thompson		8/24/10	24987
Name	Signature	Date	CTC PTL Number

Department of Environmental Quality Authorized Representative

Note: Once the project is complete, an application for a Certificate to Operate must be submitted to the appropriate DEQ Regional office.



DESIGN CRITERIA (8,100 people/3,000 ERC)

Average Annual Daily Flow	0.90 MGD
Peak Hourly Flow	1.80 MGD
Peak Equalized Flow	1.20 MGD

-	INFLUENT	INFLUENT	EFFLUENT
BOD	90 g/person/d	220 mg/L	3 mg/L
TSS	90 g/person/d	220 mg/L	3 mg/L
TKN	14 g/person/d	35 mg/L	- mg/L
Ammonia	12 g/person/d	30 mg/L	- mg/L
Total Nitrogen	- g/person/d	- mg/L	4 mg/L
Total Phosphorus	2 g/person/d	5 mg/L	0.3 mg/L

UNIT CAPACITY/VOLUME SUMMARY

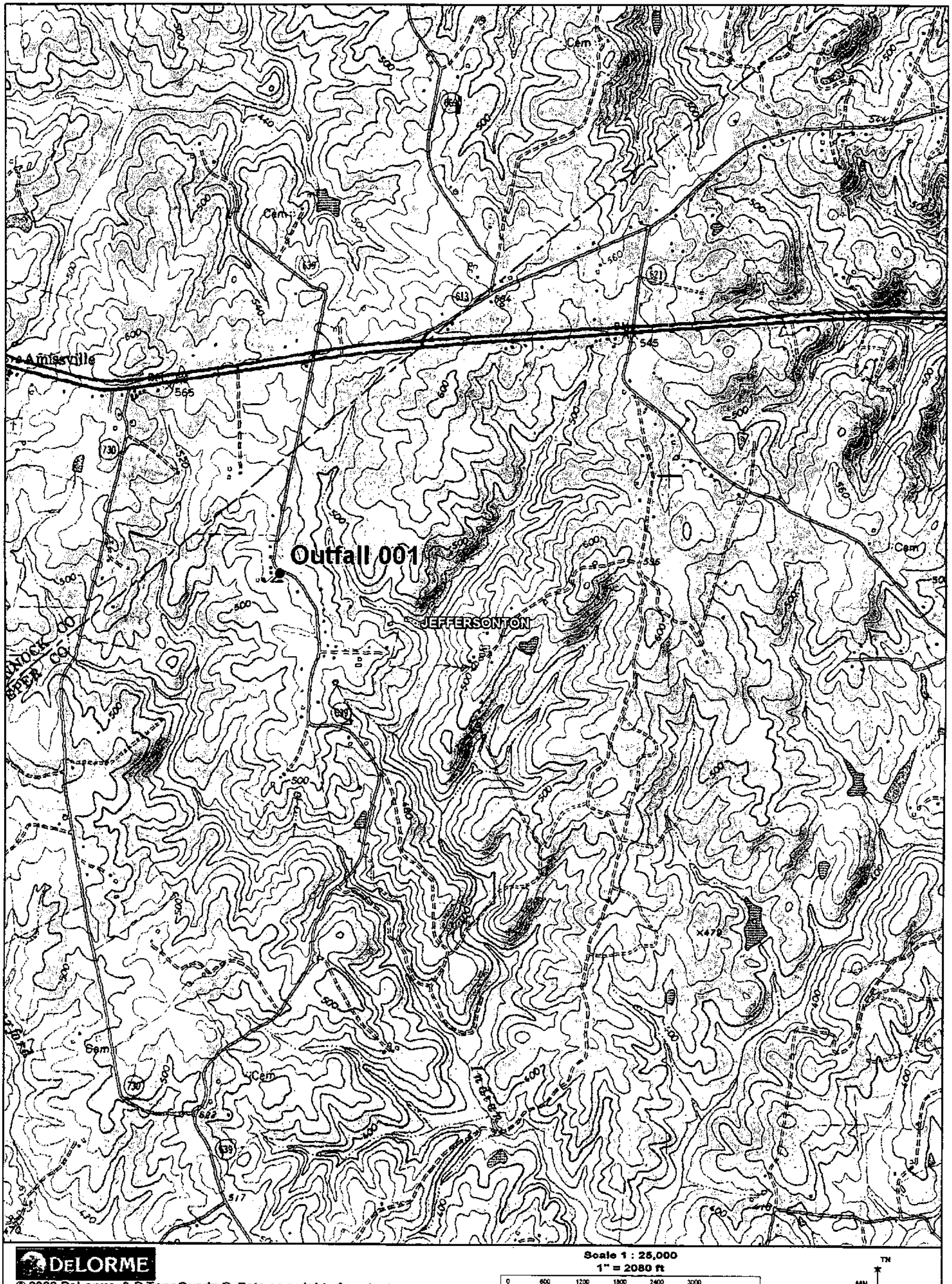
Fine Screen (1)	1.80 MGD
Manual Bar Screen (1)	2 MGD
Grit Removal (1)	2.50 MGD
Influent Parshall Flume (1)	2.5 MGD
Influent Pumps (4)	350 gpm (each)
Flow Equalization Tanks (3)	108,000 gal (each)
BNR Basins (3)	285,000 gal (each)
RML Pumps (3)	833 gpm (each)
Secondary Clarifiers (3)	36' diam x 18' SWD (each)
Filters (3)	100 sq ft (each)
RAS Pumps (3)	218 gpm (each)
Aerobic Sludge Digesters (3)	110,000 gal (each)
Effluent Parshall Flume (1)	2.50 MGD
BFP Feed Pumps (3)	100 gpm (each)
Belt Filter Press (1)	700 lb/hr
Blower (4)	1,200 scfm (each)

REV.	DATE	BY	APP.	DESCRIPTION

Wiley & Wilson
Employee-Owned
2310 Langhorne Road
Lynchburg, VA 24501-1547
www.wileywilson.com

HOLE MONTES
ENGINEERS PLANNERS SURVEYORS
950 Encore Way
Naples, FL 34110
Phone: (239)254-2000

DESIGNED RLB	DRAWN GCP	PROJECT	Clevenger's Village Wastewater Treatment Plant Culpeper County, Virginia
CHECKED HCP	REVIEWED		
COUNCIL NO. COMM	CTRL. NO.	TITLE	PROCESS FLOW DIAGRAM
CADD NO. Village Process Flow Diagram			
DATE OCTOBER 28, 2005		DWG. NO. M1D1	REV. 0


Amissville
Outfall 001
JEFFERSONTON
Cem
565
545
730
613
521
DELORME
© 2002 DeLorme. 3-D TopoQuads ®. Data copyright of content owner.
www.delorme.com
Scale 1 : 25,000
1" = 2080 ft
TN
MN
9.8°W

Mackert, Susan (DEQ)

From: Carlson, Jennifer (DEQ)
Sent: Thursday, February 28, 2013 8:36 AM
To: Mackert, Susan (DEQ)
Cc: Thomas, Bryant (DEQ); Conaway, Katie (DEQ)
Subject: RE: Planning Statement Request - VA0080527
Attachments: VA0080527 Planning Statement.docx

Good morning Susan,

Attached is the completed planning statement for Clevengers Village WWTP. Two thing to note:

1. I updated the coordinates on the planning statement for this facility, using the location shown on the map (Attachment 2) included in the 2008 Reissuance Fact Sheet
2. This facility was included in the Rappahannock River Basin TMDL and received a WLA based upon a design flow of 0.8568 MGD. After review and discussion, we decided that it would be best to have consistency for this permit, which references a maximum design flow of 0.9 MGD. The 0.9 MGD was used in the Water Quality Management Plan. There was sufficient future growth available in the Rappahannock TMDL to assign this facility a WLA based off a total design flow of 0.9 MGD.

Please let me know if you have any questions.

Thanks,
Jen

From: Mackert, Susan (DEQ)
Sent: Wednesday, January 16, 2013 7:24 AM
To: Carlson, Jennifer (DEQ)
Subject: Planning Statement Request - VA0080527

Hi Jen,

Please find attached a planning statement request for Clevengers Village WWTP. Let me know if you need anything else.

Thanks,
Susan

To:	Susan Mackert
From:	Jennifer Carlson
Date:	February 28, 2013
Subject:	Planning Statement for Clevengers Village WWTP
Permit Number:	VA0080527

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.9 MGD
Receiving Stream: Rappahannock River
Latitude / Longitude: 38°39'43.7" / -77°53'48.3"
Rivermile: 159.8
Streamcode: 3-RPP
Waterbody: VAN-E02R
Water Quality Standards: Class III, Section 3
Drainage Area: 205 mi^2

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges into the Rappahannock River. However, the receiving segment of the Rappahannock River has not been monitored or assessed by DEQ. The nearest downstream DEQ monitoring station is 3-RPP150.32, located at the Route 621 bridge crossing, approximately 9.4 miles downstream of Outfall 001. The following is the water quality summary for this portion of the Rappahannock River, as taken from the Draft 2012 Integrated Assessment*:

   Class III, Section 3.

   DEQ freshwater probabilistic monitoring station 3-RPP150.20, downstream from Route 621, and ambient water quality monitoring station 3-RPP150.32, at Route 621.

   DEQ benthic macroinvertebrate biological monitoring and associated chemical data finds this segment to be fully supporting the aquatic life and wildlife uses.

   E. coli monitoring find a bacterial impairment, resulting in an impaired classification for the recreation use. This assessment is carried forward from the 2010 assessment, as no new E. coli bacteria has been collected. This impairment is nested within the downstream completed bacteria TMDL for the Rappahannock River.

   The fish consumption use is fully supporting based on water column metals data.

   * *Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA *	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2012 Integrated Report*							
Rappahannock River	Recreation	*E. coli*	5.5 miles	Rappahannock River Basin Bacteria 1/23/2008	1.57E+12 cfu/year *E. coli*	126 cfu/year --- 0.9 MGD	N/A

** Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

To note, this facility was originally included in the Rappahannock River Basin Bacteria TMDL with a maximum design flow of 0.8568 MGD. The permit references 0.9 MGD as the maximum design flow to be consistent with the Water Quality Management Plan. There was sufficient growth included in this TMDL to assign this facility a WLA of 1.57E+12 cfu/year for *E. coli*, based upon a maximum design flow of 0.9 MGD.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

The tidal Rappahannock River, which is located approximately 48 miles downstream of this facility, is listed with a PCB impairment. In support for the PCB TMDL that is scheduled for development by 2016 for the tidal Rappahannock River, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as there are not any stream segments immediately downstream of the facility that are listed with a PCB impairment. Fish tissue monitoring has been conducted on the free flowing Rappahannock River and there have been no exceedances of the fish tissue criterion for PCBs. Based upon this information, this facility will not be requested to monitor for low-level PCBs.

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within 5 miles of this discharge.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Clevengers Village WWTP Permit No.: VA0080527

Receiving Stream: Rappahannock River Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	26	mg/L
90% Temperature (Annual) =	26	deg C
90% Temperature (Wet season) =	15	deg C
90% Maximum pH =	7.5	SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	2	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0.97	MGD
7Q10 (Annual) =	1.2	MGD
30Q10 (Annual) =	3.7	MGD
1Q10 (Wet season) =	17	MGD
30Q10 (Wet season)	32	MGD
30Q5 =	6.1	MGD
Harmonic Mean =	25	MGD

Mixing Information

Annual - 1Q10 Mix =	5.33 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	41.18 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	50	mg/L
90% Temp (Annual) =	25	deg C
90% Temp (Wet season) =	19	deg C
90% Maximum pH =	8	SU
10% Maximum pH =		SU
Discharge Flow =	0.9	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	7.7E+03	--	--	na	9.9E+01	--	--	na	7.7E+02	--	--	na	7.7E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	7.2E+01	--	--	na	9.3E-01	--	--	na	7.2E+00	--	--	na	7.2E+00
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	7.2E+01	--	--	na	2.5E-01	--	--	na	7.2E+00	--	--	na	7.2E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.2E+00	--	na	1.4E-02	7.5E-01	--	na	5.0E-05	1.6E+00	--	na	1.4E-03	1.6E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	9.20E+00	1.99E+00	na	--	9.73E+00	1.02E+01	na	--	3.78E+00	4.98E-01	na	--	7.85E+00	2.55E+00	na	--	7.85E+00	2.55E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.89E+01	4.17E+00	na	--	1.66E+02	1.52E+02	na	--	4.86E+00	1.04E+00	na	--	9.67E+01	3.81E+01	na	--	9.67E+01	3.81E+01	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	3.1E+05	--	--	na	4.0E+03	--	--	na	3.1E+04	--	--	na	3.1E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	5.0E+03	--	--	na	6.4E+01	--	--	na	5.0E+02	--	--	na	5.0E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.6E+02	3.5E+02	na	--	8.5E+01	3.8E+01	na	--	1.8E+02	8.8E+01	na	--	1.8E+02	8.8E+01	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	1.5E+04	--	--	na	5.1E+01	--	--	na	1.5E+03	--	--	na	1.5E+03
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	5.8E-02	--	--	na	2.0E-04	--	--	na	5.8E-03	--	--	na	5.8E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	5.2E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	5.2E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	5.2E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	5.2E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	1.5E+02	--	--	na	5.3E-01	--	--	na	1.5E+01	--	--	na	1.5E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	5.1E+05	--	--	na	6.5E+03	--	--	na	5.1E+04	--	--	na	5.1E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	6.3E+02	--	--	na	2.2E+00	--	--	na	6.3E+01	--	--	na	6.3E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	4.0E+04	--	--	na	1.4E+02	--	--	na	4.0E+03	--	--	na	4.0E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.5E+04	--	--	na	1.9E+02	--	--	na	1.5E+03	--	--	na	1.5E+03
Cadmium	0	1.7E+00	5.1E-01	na	--	1.8E+00	1.2E+00	na	--	3.2E-01	1.3E-01	na	--	6.7E-01	3.0E-01	na	--	6.7E-01	3.0E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	4.6E+02	--	--	na	1.6E+00	--	--	na	4.6E+01	--	--	na	4.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.5E+00	1.0E-02	na	2.3E-01	6.0E-01	1.1E-03	na	8.1E-04	1.2E+00	2.5E-03	na	2.3E-02	1.2E+00	2.5E-03	na	2.3E-02
Chloride	0	8.6E+05	2.3E+05	na	--	9.1E+05	5.4E+05	na	--	2.2E+05	5.8E+04	na	--	4.5E+05	1.3E+05	na	--	4.5E+05	1.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	2.0E+01	2.6E+01	na	--	4.8E+00	2.8E+00	na	--	9.9E+00	6.4E+00	na	--	9.9E+00	6.4E+00	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	na	1.6E+02	--	--	na	1.2E+03	--	--	na	1.2E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	3.7E+03	--	--	na	1.3E+01	--	--	na	3.7E+02	--	--	na	3.7E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	8.6E+04	--	--	na	1.1E+03	--	--	na	8.6E+03	--	--	na	8.6E+03
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	na	1.6E+02	--	--	na	1.2E+03	--	--	na	1.2E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.2E+03	--	--	na	1.5E+01	--	--	na	1.2E+02	--	--	na	1.2E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.8E-02	9.6E-02	na	--	2.1E-02	1.0E-02	na	--	4.3E-02	2.4E-02	na	--	4.3E-02	2.4E-02	na	--
Chromium III	0	3.2E+02	3.2E+01	na	--	3.3E+02	7.5E+01	na	--	6.4E+01	8.1E+00	na	--	1.3E+02	1.9E+01	na	--	1.3E+02	1.9E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.7E+01	2.6E+01	na	--	4.0E+00	2.8E+00	na	--	8.3E+00	6.4E+00	na	--	8.3E+00	6.4E+00	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	1.0E+01	--	--	--	7.8E+01	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	1.8E-03	--	--	na	5.2E-02	--	--	na	5.2E-02
Copper	0	6.8E+00	3.8E+00	na	--	7.2E+00	8.8E+00	na	--	1.3E+00	9.4E-01	na	--	2.8E+00	2.2E+00	na	--	2.8E+00	2.2E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.3E+01	1.2E+01	na	1.2E+05	5.5E+00	1.3E+00	na	1.6E+03	1.1E+01	3.0E+00	na	1.2E+04	1.1E+01	3.0E+00	na	1.2E+04
DDD[C]	0	--	--	na	3.1E-03	--	--	na	8.9E-02	--	--	na	3.1E-04	--	--	na	8.9E-03	--	--	na	8.9E-03
DDE[C]	0	--	--	na	2.2E-03	--	--	na	6.3E-02	--	--	na	2.2E-04	--	--	na	6.3E-03	--	--	na	6.3E-03
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.2E+00	2.3E-03	na	6.3E-02	2.8E-01	2.5E-04	na	2.2E-04	5.7E-01	5.8E-04	na	6.3E-03	5.7E-01	5.8E-04	na	6.3E-03
Demeton	0	--	1.0E-01	na	--	--	2.3E-01	na	--	--	2.5E-02	na	--	--	5.8E-02	na	--	--	5.8E-02	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.8E-01	4.0E-01	na	--	4.3E-02	4.3E-02	na	--	8.8E-02	9.9E-02	na	--	8.8E-02	9.9E-02	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	5.2E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.0E+04	--	--	na	1.3E+02	--	--	na	1.0E+03	--	--	na	1.0E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	7.5E+03	--	--	na	9.6E+01	--	--	na	7.5E+02	--	--	na	7.5E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.5E+03	--	--	na	1.9E+01	--	--	na	1.5E+02	--	--	na	1.5E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	8.1E+00	--	--	na	2.8E-02	--	--	na	8.1E-01	--	--	na	8.1E-01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	4.9E+03	--	--	na	1.7E+01	--	--	na	4.9E+02	--	--	na	4.9E+02
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	1.1E+04	--	--	na	3.7E+01	--	--	na	1.1E+03	--	--	na	1.1E+03
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	5.5E+04	--	--	na	7.1E+02	--	--	na	5.5E+03	--	--	na	5.5E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	7.8E+04	--	--	na	1.0E+03	--	--	na	7.8E+03	--	--	na	7.8E+03
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.3E+03	--	--	na	2.9E+01	--	--	na	2.3E+02	--	--	na	2.3E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	4.3E+03	--	--	na	1.5E+01	--	--	na	4.3E+02	--	--	na	4.3E+02
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	6.0E+03	--	--	na	2.1E+01	--	--	na	6.0E+02	--	--	na	6.0E+02
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.5E-01	1.3E-01	na	1.6E-02	6.0E-02	1.4E-02	na	5.4E-05	1.2E-01	3.3E-02	na	1.6E-03	1.2E-01	3.3E-02	na	1.6E-03
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	3.4E+05	--	--	na	4.4E+03	--	--	na	3.4E+04	--	--	na	3.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	6.6E+03	--	--	na	8.5E+01	--	--	na	6.6E+02	--	--	na	6.6E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	8.6E+06	--	--	na	1.1E+05	--	--	na	8.6E+05	--	--	na	8.6E+05
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	3.5E+04	--	--	na	4.5E+02	--	--	na	3.5E+03	--	--	na	3.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	4.1E+04	--	--	na	5.3E+02	--	--	na	4.1E+03	--	--	na	4.1E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.2E+03	--	--	na	2.8E+01	--	--	na	2.2E+02	--	--	na	2.2E+02
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	9.8E+02	--	--	na	3.4E+00	--	--	na	9.8E+01	--	--	na	9.8E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	4.0E-07	--	--	na	5.1E-09	--	--	na	4.0E-08	--	--	na	4.0E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	5.8E+01	--	--	na	2.0E-01	--	--	na	5.8E+00	--	--	na	5.8E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.3E-01	1.3E-01	na	6.9E+02	5.5E-02	1.4E-02	na	8.9E+00	1.1E-01	3.3E-02	na	6.9E+01	1.1E-01	3.3E-02	na	6.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.3E-01	1.3E-01	na	6.9E+02	5.5E-02	1.4E-02	na	8.9E+00	1.1E-01	3.3E-02	na	6.9E+01	1.1E-01	3.3E-02	na	6.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.3E-01	1.3E-01	--	--	5.5E-02	1.4E-02	--	--	1.1E-01	3.3E-02	--	--	1.1E-01	3.3E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	6.9E+02	--	--	na	8.9E+00	--	--	na	6.9E+01	--	--	na	6.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	9.1E-02	8.4E-02	na	4.7E-01	2.2E-02	9.0E-03	na	6.0E-03	4.5E-02	2.1E-02	na	4.7E-02	4.5E-02	2.1E-02	na	4.7E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	2.3E+00	--	--	na	3.0E-02	--	--	na	2.3E-01	--	--	na	2.3E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	1.6E+04	--	--	na	2.1E+02	--	--	na	1.6E+03	--	--	na	**1.6E+03**
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.1E+03	--	--	na	1.4E+01	--	--	na	1.1E+02	--	--	na	**1.1E+02**
Fluorene	0	--	--	na	5.3E+03	--	--	na	4.1E+04	--	--	na	5.3E+02	--	--	na	4.1E+03	--	--	na	**4.1E+03**
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	2.3E-02	na	--	--	2.5E-03	na	--	--	5.8E-03	na	--	--	**5.8E-03**	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.5E-01	8.9E-03	na	2.3E-02	1.3E-01	9.5E-04	na	7.9E-05	2.7E-01	2.2E-03	na	2.3E-03	**2.7E-01**	**2.2E-03**	na	**2.3E-03**
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.5E-01	8.9E-03	na	1.1E-02	1.3E-01	9.5E-04	na	3.9E-05	2.7E-01	2.2E-03	na	1.1E-03	**2.7E-01**	**2.2E-03**	na	**1.1E-03**
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	8.3E-02	--	--	na	2.9E-04	--	--	na	8.3E-03	--	--	na	**8.3E-03**
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	5.2E+03	--	--	na	1.8E+01	--	--	na	5.2E+02	--	--	na	**5.2E+02**
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	1.4E+00	--	--	na	4.9E-03	--	--	na	1.4E-01	--	--	na	**1.4E-01**
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	4.9E+00	--	--	na	1.7E-02	--	--	na	4.9E-01	--	--	na	**4.9E-01**
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	1.0E+00	--	na	5.2E+01	2.4E-01	--	na	1.8E-01	4.9E-01	--	na	5.2E+00	**4.9E-01**	--	na	**5.2E+00**
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	8.6E+03	--	--	na	1.1E+02	--	--	na	8.6E+02	--	--	na	**8.6E+02**
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	9.5E+02	--	--	na	3.3E+00	--	--	na	9.5E+01	--	--	na	**9.5E+01**
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	4.7E+00	na	--	--	5.0E-01	na	--	--	1.2E+00	na	--	--	**1.2E+00**	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	5.2E+00	--	--	na	1.8E-02	--	--	na	5.2E-01	--	--	na	**5.2E-01**
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	2.8E+05	--	--	na	9.6E+02	--	--	na	2.8E+04	--	--	na	**2.8E+04**
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	**0.0E+00**	na	--
Lead	0	4.8E+01	3.7E+00	na	--	5.0E+01	8.7E+00	na	--	8.5E+00	9.3E-01	na	--	1.8E+01	2.2E+00	na	--	**1.8E+01**	**2.2E+00**	na	--
Malathion	0	--	1.0E-01	na	--	--	2.3E-01	na	--	--	2.5E-02	na	--	--	5.8E-02	na	--	--	**5.8E-02**	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.5E+00	1.8E+00	--	--	3.5E-01	1.9E-01	--	--	7.3E-01	4.5E-01	--	--	**7.3E-01**	**4.5E-01**	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.2E+04	--	--	na	1.5E+02	--	--	na	1.2E+03	--	--	na	**1.2E+03**
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	1.7E+05	--	--	na	5.9E+02	--	--	na	1.7E+04	--	--	na	**1.7E+04**
Methoxychlor	0	--	3.0E-02	na	--	--	7.0E-02	na	--	--	7.5E-03	na	--	--	1.8E-02	na	--	--	**1.8E-02**	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	**0.0E+00**	na	--
Nickel	0	9.9E+01	8.6E+00	na	4.6E+03	1.0E+02	2.0E+01	na	3.6E+04	2.0E+01	2.1E+00	na	4.6E+02	4.1E+01	5.0E+00	na	3.6E+03	**4.1E+01**	**5.0E+00**	na	**3.6E+03**
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	5.4E+03	--	--	na	6.9E+01	--	--	na	5.4E+02	--	--	na	**5.4E+02**
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	8.6E+02	--	--	na	3.0E+00	--	--	na	8.6E+01	--	--	na	**8.6E+01**
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	1.7E+03	--	--	na	6.0E+00	--	--	na	1.7E+02	--	--	na	**1.7E+02**
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	1.5E+02	--	--	na	5.1E-01	--	--	na	1.5E+01	--	--	na	**1.5E+01**
Nonylphenol	0	2.8E+01	6.6E+00	--	--	3.0E+01	1.5E+01	na	--	7.0E+00	1.7E+00	--	--	1.5E+01	3.9E+00	--	--	**1.5E+01**	**3.9E+00**	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.9E-02	3.0E-02	na	--	1.6E-02	3.3E-03	na	--	3.4E-02	7.6E-03	na	--	**3.4E-02**	**7.6E-03**	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	3.3E-02	na	1.8E-02	--	3.5E-03	na	6.4E-05	--	8.2E-03	na	1.8E-03	--	**8.2E-03**	na	**1.8E-03**
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	8.1E-03	1.4E-02	na	8.6E+02	1.9E-03	1.5E-03	na	3.0E+00	4.0E-03	3.4E-03	na	8.6E+01	**4.0E-03**	**3.4E-03**	na	**8.6E+01**
Phenol	0	--	--	na	8.6E+05	--	--	na	6.7E+06	--	--	na	8.6E+04	--	--	na	6.7E+05	--	--	na	**6.7E+05**
Pyrene	0	--	--	na	4.0E+03	--	--	na	3.1E+04	--	--	na	4.0E+02	--	--	na	3.1E+03	--	--	na	**3.1E+03**
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.1E+01	1.2E+01	na	3.3E+04	5.0E+00	1.3E+00	na	4.2E+02	1.0E+01	2.9E+00	na	3.3E+03	**1.0E+01**	**2.9E+00**	**na**	**3.3E+03**
Silver	0	1.0E+00	--	na	--	1.1E+00	--	na	--	1.6E-01	--	na	--	3.3E-01	--	na	--	**3.3E-01**	--	**na**	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	**na**	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	1.2E+03	--	--	na	4.0E+00	--	--	na	1.2E+02	--	--	**na**	**1.2E+02**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	9.5E+02	--	--	na	3.3E+00	--	--	na	9.5E+01	--	--	**na**	**9.5E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	3.7E+00	--	--	na	4.7E-02	--	--	na	3.7E-01	--	--	**na**	**3.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	4.7E+04	--	--	na	6.0E+02	--	--	na	4.7E+03	--	--	**na**	**4.7E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	**na**	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.7E-01	4.7E-04	na	8.1E-02	1.8E-01	5.0E-05	na	2.8E-04	3.8E-01	1.2E-04	na	8.1E-03	**3.8E-01**	**1.2E-04**	**na**	**8.1E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.9E-01	1.7E-01	na	--	1.2E-01	1.8E-02	na	--	2.4E-01	4.2E-02	na	--	**2.4E-01**	**4.2E-02**	**na**	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	5.4E+02	--	--	na	7.0E+00	--	--	na	5.4E+01	--	--	**na**	**5.4E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	4.6E+03	--	--	na	1.6E+01	--	--	na	4.6E+02	--	--	**na**	**4.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	8.6E+03	--	--	na	3.0E+01	--	--	na	8.6E+02	--	--	**na**	**8.6E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	6.9E+02	--	--	na	2.4E+00	--	--	na	6.9E+01	--	--	**na**	**6.9E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	**na**	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	6.9E+02	--	--	na	2.4E+00	--	--	na	6.9E+01	--	--	**na**	**6.9E+01**
Zinc	0	6.4E+01	5.0E+01	na	2.6E+04	6.7E+01	1.2E+02	na	2.0E+05	1.3E+01	1.3E+01	na	2.6E+03	2.7E+01	2.9E+01	na	2.0E+04	**2.7E+01**	**2.9E+01**	**na**	**2.0E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	5.0E+02
Arsenic	5.3E+01
Barium	na
Cadmium	1.8E-01
Chromium III	1.1E+01
Chromium VI	3.3E+00
Copper	1.1E+00
Iron	na
Lead	1.3E+00
Manganese	na
Mercury	2.7E-01
Nickel	3.0E+00
Selenium	1.8E+00
Silver	1.3E-01
Zinc	1.1E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Mixing Zone Predictions for Clevengers Utility STP

Effluent Flow = 0.90 MGD (Annual)
Stream 7Q10 = 1.2 MGD
Stream 30Q10 = 3.7 MGD
Stream 1Q10 = 0.97 MGD
Stream slope = 0.00125 ft/ft
Stream width = 50 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1886 ft
Length = 20983.83 ft
Velocity = .3448 ft/sec
Residence Time = .7045 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .3024 ft
Length = 14113.17 ft
Velocity = .4709 ft/sec
Residence Time = .3469 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1759 ft
Length = 22248.23 ft
Velocity = .3292 ft/sec
Residence Time = 18.7738 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 5.33% of the 1Q10 is used.

Mixing Zone Predictions for Clevengers Utility STP

Effluent Flow = 0.9 MGD (Wet)
Stream 7Q10 = 21 MGD
Stream 30Q10 = 32 MGD
Stream 1Q10 = 17 MGD
Stream slope = 0.00125 ft/ft
Stream width = 50 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .7771 ft
Length = 6349.27 ft
Velocity = .8725 ft/sec
Residence Time = .0842 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .9953 ft
Length = 5136.68 ft
Velocity = 1.0233 ft/sec
Residence Time = .0581 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .6875 ft
Length = 7047.2 ft
Velocity = .806 ft/sec
Residence Time = 2.4286 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 41.18% of the 1Q10 is used.

VA0080527 Clevengers Village WWTP - Receiving Stream Data (December - May)

Date	Monitoring Station	Parameter Description	Concentration	Comments
1/8/08	3-RPP175.51	Temperature (°C)	5.4	Depth (m) - 0.3
3/6/08	3-RPP175.51	Temperature (°C)	8.0	Depth (m) - 0.3
5/1/08	3-RPP175.51	Temperature (°C)	11.2	Depth (m) - 0.3
1/7/09	3-RPP175.51	Temperature (°C)	3.5	Depth (m) - 0.3
3/4/09	3-RPP175.51	Temperature (°C)	1.9	Depth (m) - 0.3
5/27/09	3-RPP175.51	Temperature (°C)	15.7	Depth (m) - 0.3
1/7/10	3-RPP175.51	Temperature (°C)	1.1	Depth (m) - 0.3
3/15/10	3-RPP175.51	Temperature (°C)	8.1	Depth (m) - 0.3
5/12/10	3-RPP175.51	Temperature (°C)	14.6	Depth (m) - 0.3
2/3/11	3-RPP175.51	Temperature (°C)	3.8	Depth (m) - 0.3
3/23/11	3-RPP175.51	Temperature (°C)	11.7	Depth (m) - 0.3
5/3/11	3-RPP175.51	Temperature (°C)	17.2	Depth (m) - 0.3
1/19/12	3-RPP175.51	Temperature (°C)	2.06	Depth (m) - 0.3
3/8/12	3-RPP175.51	Temperature (°C)	10.75	Depth (m) - 0.3
1/2/13	3-RPP175.51	Temperature (°C)	1.74	Depth (m) - 0.3

90% Temperature = 15°C

VA0080527 Clevengers Village WWTP - Receiving Stream Data (June - November)

Date	Monitoring Station	Parameter Description	Concentration	Comments
7/2/08	3-RPP175.51	Temperature (°C)	21.8	Depth (m) - 0.3
9/4/08	3-RPP175.51	Temperature (°C)	23.0	Depth (m) - 0.3
11/4/08	3-RPP175.51	Temperature (°C)	12.1	Depth (m) - 0.3
7/20/09	3-RPP175.51	Temperature (°C)	20.4	Depth (m) - 0.3
9/17/09	3-RPP175.51	Temperature (°C)	18.6	Depth (m) - 0.3
11/2/09	3-RPP175.51	Temperature (°C)	13.7	Depth (m) - 0.3
7/7/10	3-RPP175.51	Temperature (°C)	27.1	Depth (m) - 0.3
11/1/10	3-RPP175.51	Temperature (°C)	10.7	Depth (m) - 0.3
7/7/11	3-RPP175.51	Temperature (°C)	25.9	Depth (m) - 0.3
9/6/11	3-RPP175.51	Temperature (°C)	19.2	Depth (m) - 0.3
11/14/11	3-RPP175.51	Temperature (°C)	9.5	Depth (m) - 0.3
6/11/12	3-RPP175.51	Temperature (°C)	22.41	Depth (m) - 0.3
7/30/12	3-RPP175.51	Temperature (°C)	25.88	Depth (m) - 0.3

90% Temperature = 26°C

VA0080527 Clevengers Village WWTP - Receiving Stream Data

Date	Monitoring Station	Parameter Description	Concentration	Comments
1/8/08	3-RPP175.51	pH (S.U.)	6.6	Depth (m) - 0.3
3/6/08	3-RPP175.51	pH (S.U.)	7.1	Depth (m) - 0.3
5/1/08	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3
7/2/08	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3
9/4/08	3-RPP175.51	pH (S.U.)	7.5	Depth (m) - 0.3
11/4/08	3-RPP175.51	pH (S.U.)	7.4	Depth (m) - 0.3
1/7/09	3-RPP175.51	pH (S.U.)	7.1	Depth (m) - 0.3
3/4/09	3-RPP175.51	pH (S.U.)	7.3	Depth (m) - 0.3
5/27/09	3-RPP175.51	pH (S.U.)	7.1	Depth (m) - 0.3
7/20/09	3-RPP175.51	pH (S.U.)	7.3	Depth (m) - 0.3
9/17/09	3-RPP175.51	pH (S.U.)	7.0	Depth (m) - 0.3
11/2/09	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3
1/7/10	3-RPP175.51	pH (S.U.)	7.1	Depth (m) - 0.3
3/15/10	3-RPP175.51	pH (S.U.)	7.0	Depth (m) - 0.3
5/12/10	3-RPP175.51	pH (S.U.)	7.5	Depth (m) - 0.3
7/7/10	3-RPP175.51	pH (S.U.)	7.3	Depth (m) - 0.3
11/1/10	3-RPP175.51	pH (S.U.)	7.5	Depth (m) - 0.3
2/3/11	3-RPP175.51	pH (S.U.)	7.3	Depth (m) - 0.3
3/23/11	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3
5/3/11	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3
7/7/11	3-RPP175.51	pH (S.U.)	7.4	Depth (m) - 0.3
9/6/11	3-RPP175.51	pH (S.U.)	7.0	Depth (m) - 0.3
11/14/11	3-RPP175.51	pH (S.U.)	7.6	Depth (m) - 0.3
1/19/12	3-RPP175.51	pH (S.U.)	6.9	Depth (m) - 0.3
3/8/12	3-RPP175.51	pH (S.U.)	7.4	Depth (m) - 0.3
6/11/12	3-RPP175.51	pH (S.U.)	7.5	Depth (m) - 0.3
7/30/12	3-RPP175.51	pH (S.U.)	7.4	Depth (m) - 0.3
1/2/13	3-RPP175.51	pH (S.U.)	7.2	Depth (m) - 0.3

90% pH = 7.5 S.U.

VA0080527 Clevengers Village WWTP - Temperature Data (December - May)

Due*	Outfall	Parameter Description	Concentration Average	Limit Average	Comments
1/10/11	001	Temperature (°C)	10.2	No Limit	DMR
2/10/11	001	Temperature (°C)	9.6	No Limit	DMR
3/10/11	001	Temperature (°C)	10.2	No Limit	DMR
4/10/11	001	Temperature (°C)	13.2	No Limit	DMR
5/10/11	001	Temperature (°C)	16.5	No Limit	DMR
6/10/11	001	Temperature (°C)	20.0	No Limit	DMR
1/10/12	001	Temperature (°C)	13.7	No Limit	DMR
2/10/12	001	Temperature (°C)	11.3	No Limit	DMR
3/10/12	001	Temperature (°C)	9.0	No Limit	DMR
4/10/12	001	Temperature (°C)	15.4	No Limit	DMR
5/10/12	001	Temperature (°C)	17.1	No Limit	DMR
6/10/12	001	Temperature (°C)	20.5	No Limit	DMR
1/10/13	001	Temperature (°C)	12.7	No Limit	DMR

90% Temperature = 19°C

*DMR reporting is required on a monthly basis. The sample due date reflects samples collected during the previous month.

VA0080527 Clevengers Village WWTP - Temperature Data (June - November)

Due*	Outfall	Parameter Description	Concentration Average	Limit Average	Comments
7/10/11	001	Temperature (°C)	23.0	No Limit	DMR
8/10/11	001	Temperature (°C)	24.9	No Limit	DMR
9/10/11	001	Temperature (°C)	24.3	No Limit	DMR
10/10/11	001	Temperature (°C)	22.1	No Limit	DMR
11/10/11	001	Temperature (°C)	19.5	No Limit	DMR
12/10/11	001	Temperature (°C)	16.0	No Limit	DMR
7/10/12	001	Temperature (°C)	22.7	No Limit	DMR
8/10/12	001	Temperature (°C)	25.2	No Limit	DMR
9/10/12	001	Temperature (°C)	24.5	No Limit	DMR
10/10/12	001	Temperature (°C)	22.8	No Limit	DMR
11/10/12	001	Temperature (°C)	19.9	No Limit	DMR
12/10/12	001	Temperature (°C)	14.2	No Limit	DMR

90% Temperature = 25°C

*DMR reporting is required on a monthly basis. The sample due date reflects samples collected during the previous month.

VA0080527 Clevengers Village WWTP - pH Data

Due*	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
1/10/11	001	pH (S.U.)	7.4	6.0	7.7	9.0	DMR
2/10/11	001	pH (S.U.)	6.8	6.0	7.7	9.0	DMR
3/10/11	001	pH (S.U.)	7.4	6.0	7.7	9.0	DMR
4/10/11	001	pH (S.U.)	7.3	6.0	7.7	9.0	DMR
5/10/11	001	pH (S.U.)	7.2	6.0	7.6	9.0	DMR
6/10/11	001	pH (S.U.)	6.9	6.0	7.7	9.0	DMR
7/10/11	001	pH (S.U.)	7.2	6.0	7.8	9.0	DMR
8/10/11	001	pH (S.U.)	6.8	6.0	7.7	9.0	DMR
9/10/11	001	pH (S.U.)	7.3	6.0	8.3	9.0	DMR
10/10/11	001	pH (S.U.)	7.3	6.0	8.6	9.0	DMR
11/10/11	001	pH (S.U.)	7.1	6.0	8.0	9.0	DMR
12/10/11	001	pH (S.U.)	7.1	6.0	7.9	9.0	DMR
1/10/12	001	pH (S.U.)	7.3	6.0	7.8	9.0	DMR
2/10/12	001	pH (S.U.)	7.0	6.0	7.7	9.0	DMR
3/10/12	001	pH (S.U.)	7.2	6.0	7.8	9.0	DMR
4/10/12	001	pH (S.U.)	7.3	6.0	7.8	9.0	DMR
5/10/12	001	pH (S.U.)	7.4	6.0	8.1	9.0	DMR
6/10/12	001	pH (S.U.)	7.4	6.0	7.9	9.0	DMR
7/10/12	001	pH (S.U.)	7.6	6.0	8.2	9.0	DMR
8/10/12	001	pH (S.U.)	7.7	6.0	8.0	9.0	DMR
9/10/12	001	pH (S.U.)	7.0	6.0	8.0	9.0	DMR
10/10/12	001	pH (S.U.)	7.6	6.0	7.9	9.0	DMR
11/10/12	001	pH (S.U.)	7.4	6.0	7.9	9.0	DMR
12/10/12	001	pH (S.U.)	7.4	6.0	8.2	9.0	DMR
1/10/13	001	pH (S.U.)	7.5	6.0	7.9	9.0	DMR

90% pH = 8.0 S.U.

*DMR reporting is required on a monthly basis. The sample due date reflects samples collected during the previous month.

4/17/2013 1:34:51 PM (2013 Reissuance)

Facility = Clevengers Village WWTP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 97
WLAc = 38
Q.L. = 0.2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

****

REGIONAL MODELING SYSTEM VERSION 1

****

MODEL SIMULATION FOR THE South Wales STP DISCHARGE TO Rappahannock River

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Run with new year-round 7q10 of 1.9871 cfs (1.2844 mgd)

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS

THE SIMULATION STARTS AT South Wales STP

FLOW = .8568 MGD cBOD5 = 3 Mg/L TKN = 3 Mg/l D.O. = 7.6 Mg/L

RESULTS WILL BE GIVEN AT .1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 1.344931 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.303 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-S/ Mg/I
1.00	1.90	0.34	3.16	0.50	0.15	0.00	305.0	26.00	8.1
2.00	3.00	0.33	3.00	0.50	0.15	0.00	292.5	26.00	8.1

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.028 Mg/L ****

DISTANCE	DISSOLVED OXYGEN	cBOD	nBOD
0.00	7.42	5.97	0.00
0.10	7.39	5.90	0.00
0.20	7.37	5.83	0.00
0.30	7.35	5.76	0.00
0.40	7.34	5.69	0.00
0.50	7.32	5.63	0.00
0.60	7.31	5.56	0.00
0.70	7.29	5.49	0.00
0.80	7.28	5.43	0.00
0.90	7.27	5.36	0.00
1.00	7.27	5.30	0.00
1.10	7.26	5.24	0.00
1.20	7.25	5.18	0.00
1.30	7.25	5.11	0.00
1.40	7.25	5.05	0.00
1.50	7.24	4.99	0.00
1.60	7.24	4.93	0.00
1.70	7.24	4.88	0.00
1.80	7.24	4.82	0.00
1.90	7.24	4.76	0.00

THERE IS A DISCHARGE AT THE END OF SEGMENT 1
FLOW = .01743 MGD cBOD5 = 30 Mg/L TKN = 20 Mg/L D.O. = 6 Mg/L

DISTANCE	DISSOLVED OXYGEN	cBOD	nBOD
1.90	7.23	5.31	0.57
2.00	7.22	5.25	0.57
2.10	7.21	5.18	0.57
2.20	7.21	5.12	0.57
2.30	7.20	5.06	0.56
2.40	7.20	5.00	0.56
2.50	7.19	4.94	0.56
2.60	7.19	4.88	0.56
2.70	7.19	4.82	0.55
2.80	7.19	4.76	0.55
2.90	7.19	4.70	0.55
3.00	7.19	4.64	0.55
3.10	7.19	4.59	0.55
3.20	7.19	4.53	0.54
3.30	7.19	4.48	0.54
3.40	7.19	4.42	0.54
3.50	7.20	4.37	0.54
3.60	7.20	4.32	0.53
3.70	7.20	4.27	0.53
3.80	7.21	4.21	0.53
3.90	7.21	4.16	0.53
4.00	7.22	4.11	0.52
4.10	7.22	4.06	0.52
4.20	7.23	4.01	0.52
4.30	7.23	3.97	0.52
4.40	7.24	3.92	0.51
4.50	7.25	3.87	0.51
4.60	7.25	3.82	0.51
4.70	7.26	3.78	0.51
4.80	7.27	3.73	0.51
4.90	7.27	3.69	0.50
4.90	7.27	3.69	0.50

REGIONAL MODELING SYSTEM VERSION 3.2

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MODEL SIMULATION FOR THE SOUTH WALES STP DISCHARGE

TO RAPPAHANNOCK RIVER

THE SIMULATION STARTS AT THE SOUTH WALES STP DISCHARGE

********** PROPOSED PERMIT LIMITS **********

FLOW = .8568 MGD cBOD5 = 25 Mg/L TKN = 32 Mg/L D.O. = 7.6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.284 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 21.28246 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 8.419 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. ½C	DO-SA Mg/L
1	1.90	0.337	3.158	0.500	0.150	0.000	305.00	18.00	9.35
2	3.00	0.331	3.000	0.500	0.150	0.000	292.50	18.00	9.35

(The K Rates shown are at 20½C ... the model corrects them for temperature.)

TOTAL STREAMFLOW = 22.1393 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	8.387	7.225	4.860
0.100	0.100	8.370	7.166	4.848
0.200	0.200	8.353	7.107	4.837
0.300	0.300	8.339	7.048	4.826
0.400	0.400	8.325	6.990	4.814
0.500	0.500	8.313	6.932	4.803
0.600	0.600	8.302	6.875	4.792
0.700	0.700	8.292	6.819	4.781
0.800	0.800	8.283	6.763	4.770
0.900	0.900	8.275	6.707	4.759
1.000	1.000	8.267	6.652	4.748
1.100	1.100	8.261	6.597	4.736
1.200	1.200	8.256	6.543	4.726
1.300	1.300	8.251	6.489	4.714
1.400	1.400	8.247	6.435	4.703
1.500	1.500	8.243	6.382	4.693
1.600	1.600	8.241	6.330	4.682
1.700	1.700	8.238	6.277	4.671
1.800	1.800	8.237	6.226	4.660
1.900	1.900	8.236	6.174	4.649

FOR THE DISCHARGE AT THE END OF SEGMENT 1
DISCHARGER = FAUQUIER SPRING CC
FLOW = .01743 MGD cBOD5 = 30 Mg/L TKN = 20 Mg/L D.O. = 6 Mg/

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.2220 MGD

TOTAL STREAMFLOW = 22.3787 MGD
(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	1.900	8.236	6.216	4.656
0.100	2.000	8.232	6.164	4.646
0.200	2.100	8.229	6.113	4.635
0.300	2.200	8.226	6.061	4.623
0.400	2.300	8.224	6.010	4.613
0.500	2.400	8.223	5.960	4.602
0.600	2.500	8.222	5.910	4.591
0.700	2.600	8.222	5.860	4.580
0.800	2.700	8.222	5.811	4.569
0.900	2.800	8.222	5.763	4.558
1.000	2.900	8.223	5.714	4.547
1.100	3.000	8.224	5.666	4.536
1.200	3.100	8.226	5.619	4.526
1.300	3.200	8.228	5.572	4.515
1.400	3.300	8.230	5.525	4.504
1.500	3.400	8.233	5.479	4.494
1.600	3.500	8.235	5.433	4.483
1.700	3.600	8.238	5.387	4.472
1.800	3.700	8.242	5.342	4.462
1.900	3.800	8.245	5.297	4.451
2.000	3.900	8.249	5.253	4.440
2.100	4.000	8.253	5.209	4.430
2.200	4.100	8.257	5.165	4.419
2.300	4.200	8.261	5.122	4.409
2.400	4.300	8.266	5.079	4.398
2.500	4.400	8.270	5.036	4.388
2.600	4.500	8.275	5.000	4.378
2.700	4.600	8.320	5.000	4.367
2.800	4.700	8.364	5.000	4.357
2.900	4.800	8.405	5.000	4.347
3.000	4.900	8.422	5.000	4.336

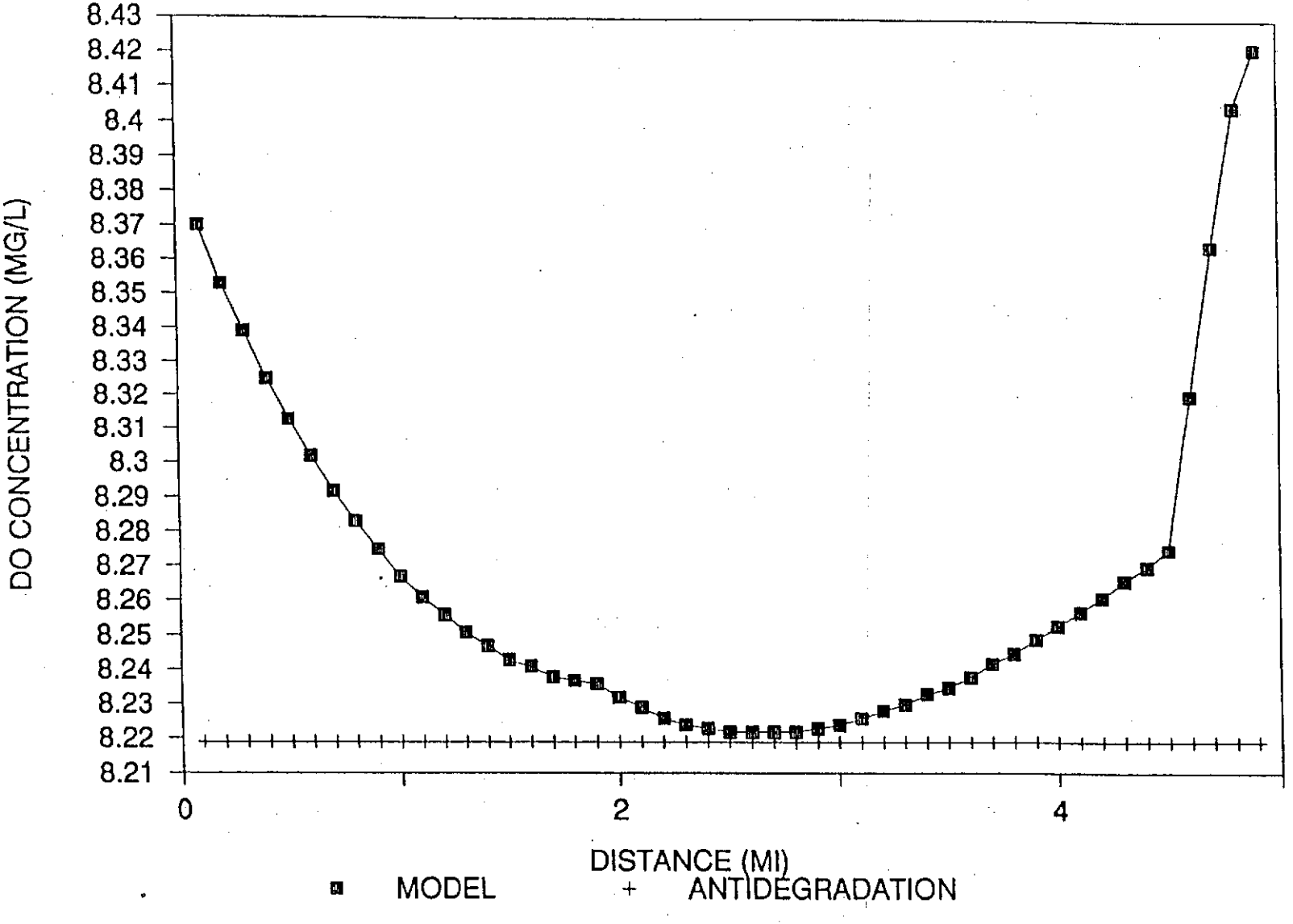
****

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
10-30-1991 10:25:31

DATA FILE = SOUTH5.MOD

DO ANALYSIS

CBOD5 = 25 MG/L TKN = 32 MG/L



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MODEL SIMULATION FOR THE SOUTH WALES STP DISCHARGE

TO RAPPAHANNOCK RIVER

THE SIMULATION STARTS AT THE SOUTH WALES STP DISCHARGE

********** PROPOSED PERMIT LIMITS **********

FLOW = .8568 MGD cBOD5 = 25 Mg/L TKN = 40 Mg/L D:O. = 7.6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.284 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 21.28246 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 8.419 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. ½C	DO-SA Mg/L
1	1.90	0.337	3.158	0.500	0.200	0.000	305.00	18.00	9.354
2	3.00	0.331	3.000	0.500	0.200	0.000	292.50	18.00	9.358

(The K Rates shown are at 20½C ... the model corrects them for temperature.)

TOTAL STREAMFLOW = 22.1393 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	8.387	7.225	6.200
0.100	0.100	8.362	7.166	6.181
0.200	0.200	8.338	7.107	6.162
0.300	0.300	8.317	7.048	6.143
0.400	0.400	8.297	6.990	6.123
0.500	0.500	8.278	6.932	6.104
0.600	0.600	8.262	6.875	6.085
0.700	0.700	8.246	6.819	6.067
0.800	0.800	8.232	6.763	6.048
0.900	0.900	8.219	6.707	6.029
1.000	1.000	8.208	6.652	6.010
1.100	1.100	8.197	6.597	5.992
1.200	1.200	8.188	6.543	5.973
1.300	1.300	8.179	6.489	5.955
1.400	1.400	8.172	6.435	5.936
1.500	1.500	8.165	6.382	5.918
1.600	1.600	8.159	6.330	5.899
1.700	1.700	8.154	6.277	5.881
1.800	1.800	8.150	6.226	5.863
1.900	1.900	8.146	6.174	5.844

èëë£
¤ ANTIDEGRADATION IS VIOLATED IN THIS SEGMENT ¤
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FOR THE DISCHARGE AT THE END OF SEGMENT 1
DISCHARGER = FAUQUIER SPRING CC
FLOW = .01743 MGD cBOD5 = 30 Mg/L TKN = 20 Mg/L D.O. = 6 Mg/I

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.2220 MGD

TOTAL STREAMFLOW = 22.3787 MGD
(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	1.900	8.147	6.216	5.839
0.100	2.000	8.141	6.164	5.821
0.200	2.100	8.135	6.113	5.802
0.300	2.200	8.130	6.061	5.784
0.400	2.300	8.126	6.010	5.766
0.500	2.400	8.123	5.960	5.747
0.600	2.500	8.120	5.910	5.729
0.700	2.600	8.118	5.860	5.711
0.800	2.700	8.116	5.811	5.693
0.900	2.800	8.115	5.763	5.675
1.000	2.900	8.114	5.714	5.657
1.100	3.000	8.114	5.666	5.639
1.200	3.100	8.115	5.619	5.622
1.300	3.200	8.116	5.572	5.604
1.400	3.300	8.117	5.525	5.586
1.500	3.400	8.118	5.479	5.568
1.600	3.500	8.120	5.433	5.551
1.700	3.600	8.122	5.387	5.533
1.800	3.700	8.125	5.342	5.516
1.900	3.800	8.128	5.297	5.498
2.000	3.900	8.131	5.253	5.481
2.100	4.000	8.134	5.209	5.464
2.200	4.100	8.138	5.165	5.446
2.300	4.200	8.142	5.122	5.429
2.400	4.300	8.146	5.079	5.412
2.500	4.400	8.150	5.036	5.395
2.600	4.500	8.154	5.000	5.378
2.700	4.600	8.200	5.000	5.361
2.800	4.700	8.243	5.000	5.344
2.900	4.800	8.284	5.000	5.327
3.000	4.900	8.323	5.000	5.310

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¤ ANTIDEGRADATION IS VIOLATED IN THIS SEGMENT ¤
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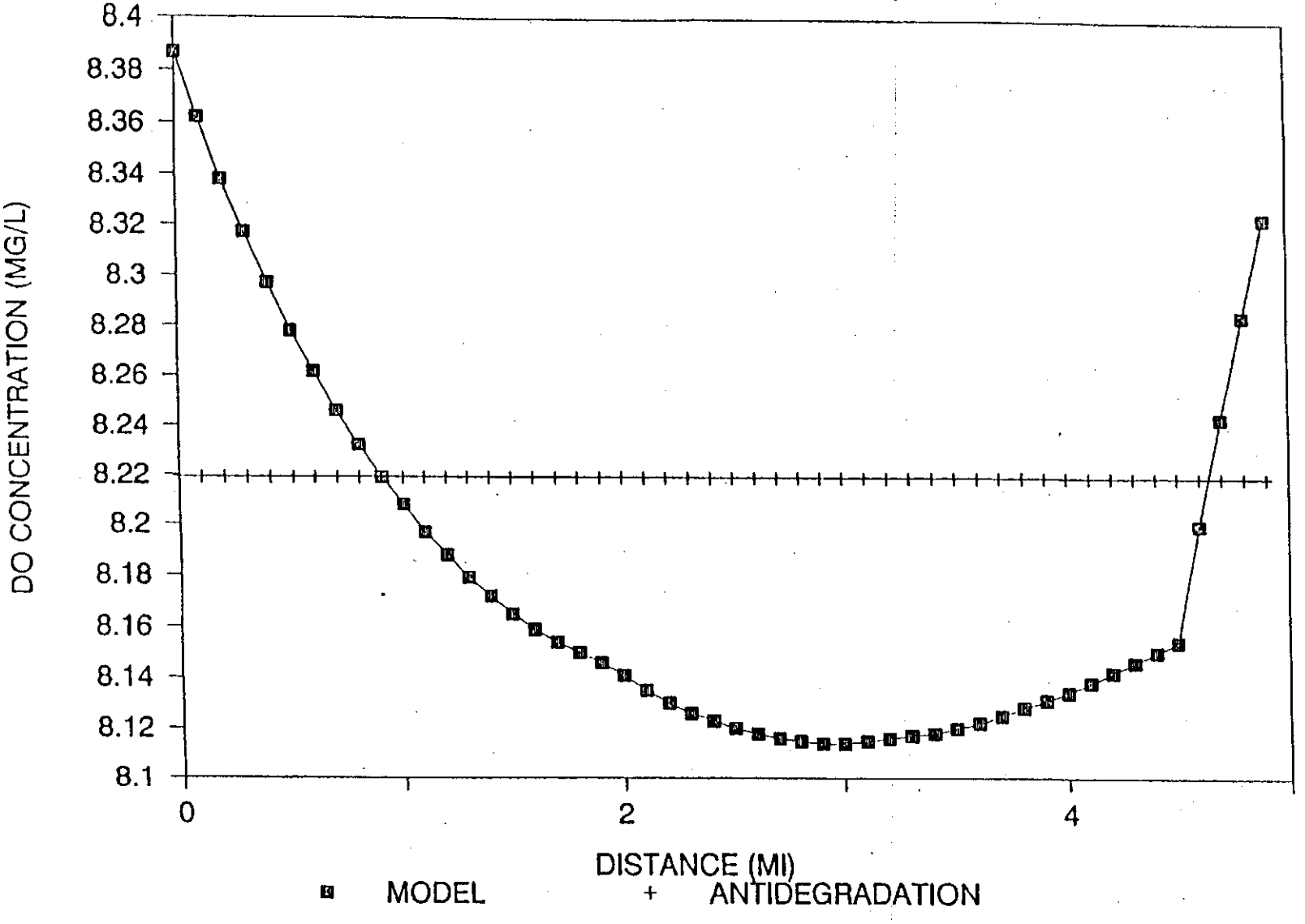
REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
10-30-1991 08:20:43

DATA FILE = SOUTHWAL.MOD

DO ANALYSIS

CBOD5 = 25 MG/L TKN = 40 MG/L



4/17/2013 1:36:48 PM

Facility = Clevengers Village WWTP
Chemical = Zinc
Chronic averaging period = 30
WLAa = 27
WLAc = 29
Q.L. = 11
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 42
Variance = 635.04
C.V. = 0.6
97th percentile daily values = 102.203
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 27
Average Weekly limit = 27
Average Monthly LImit = 27

The data are:

42

VA0080527 Clevengers Village WWTP - Zinc Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/27/12	001	Zinc, Total Dissolved (µg/L)	42	NL	42	NL	Attachment A

4/17/2013 1:57:01 PM

Facility = Clevengers Village WWTP
Chemical = Chlorpyrifos (Dursban)
Chronic averaging period = 30
WLAa = 0.043
WLAc = 0.025
Q.L. = 0.5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value =
Variance =
C.V. =
97th percentile daily values =
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 1
Model used =

No Limit is required for this material

The data are:

0.24

VA0080527 Clevengers Village WWTP - Chlorpyrifos Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/19/12	001	Chlorpyrifos (µg/L)	0.24	NL	0.24	NL	Attachment A

4/17/2013 1:58:23 PM

Facility = Clevengers Village WWTP
Chemical = Demeton
Chronic averaging period = 30
WLAa =
WLAc = 0.058
Q.L. = 0.5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value =
Variance =
C.V. =
97th percentile daily values =
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 1
Model used =

No Limit is required for this material

The data are:

0.23

VA0080527 Clevengers Village WWTP - Demeton Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/19/12	001	Demeton (µg/L)	0.23	NL	0.23	NL	Attachment A

4/17/2013 1:59:45 PM

Facility = Clevengers Village WWTP
Chemical = Guthion
Chronic averaging period = 30
WLAa =
WLAc = 0.0058
Q.L. = 0.5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value =
Variance =
C.V. =
97th percentile daily values =
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 1
Model used =

No Limit is required for this material

The data are:

0.32

VA0080527 Clevengers Village WWTP - Guthion Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/19/12	001	Guthion (µg/L)	0.32	NL	0.32	NL	Attachment A

4/17/2013 2:00:45 PM

Facility = Clevengers Village WWTP
Chemical = Malathion
Chronic averaging period = 30
WLAa =
WLAc = 0.058
Q.L. = 0.5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value =
Variance =
C.V. =
97th percentile daily values =
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 1
Model used =

No Limit is required for this material

The data are:

0.25

VA0080527 Clevengers Village WWTP - Malathion Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/19/12	001	Malathion (µg/L)	0.25	NL	0.25	NL	Attachment A

4/17/2013 2:01:55 PM

Facility = Clevengers Village WWTP
Chemical = Parathion
Chronic averaging period = 30
WLAa = 0.034
WLAc = 0.0076
Q.L. = 0.5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value =
Variance =
C.V. =
97th percentile daily values =
97th percentile 4 day average = 69.8791
97th percentile 30 day average= 50.6542
< Q.L. = 1
Model used =

No Limit is required for this material

The data are:

0.28

VA0080527 Clevengers Village WWTP - Parathion Data

Date	Outfall	Parameter Description	Concentration Minimum	Limit Minimum	Concentration Maximum	Limit Maximum	Comments
12/19/12	001	Parathion (µg/L)	0.28	NL	0.28	NL	Attachment A

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Culpeper County, Virginia.

PUBLIC COMMENT PERIOD: **TBD, 2013 to TBD, 2013**

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board.

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: The County of Culpeper, 118 West Davis Street – Suite 101, Culpeper, VA 22701, VA0080527

NAME AND ADDRESS OF FACILITY: Clevengers Village Wastewater Treatment Plant, 19525 Clevengers Utility Road, Jeffersonton, VA 22724

PROJECT DESCRIPTION: The County of Culpeper has applied for a reissuance of a permit for the public Clevengers Village Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.90 million gallons per day into a water body. The sludge will be transported by contractor for final disposal in the Old Dominion Sanitary Landfill. The facility proposes to release the treated sewage wastewater in the Rappahannock River in Culpeper County in the Rappahannock River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD_5, $CBOD_5$, Total Suspended Solids, Dissolved Oxygen, Ammonia as N, Total Kjeldahl Nitrogen, Total Nitrogen (calendar year), Total Phosphorus (calendar year), and *E. coli*. The permit will also monitor the following pollutants to protect water quality: Nitrate+Nitrite, Dissolved Zinc, Total Hardness, Chlorpyrifos, Demeton, Guthion, Malathion, and Parathion.

This facility is subject to the requirements of 9VAC25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Susan Mackert
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Clevengers Village WWTP
NPDES Permit Number:	VA0080527
Permit Writer Name:	Susan Mackert
Date:	March 18, 2013

Major [ ] **Minor [X]** **Industrial [ ]** **Municipal [X]**

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?			X
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?		X	
2. Does the permit include appropriate storm water program requirements?			X
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?		X	

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

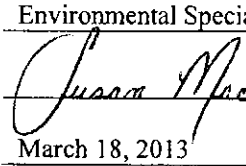
List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
Duty to mitigate	Monitoring and records	Transfers
Proper O & M	Signatory requirement	Monitoring reports
Permit actions	Bypass	Compliance schedules
	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Susan Mackert
Title	Environmental Specialist II, Senior II
Signature	
Date	March 18, 2013